Solicitation Information
July 20, 2015

RFP # 7549749

TITLE: Resilient Microgrids for Critical Services

Submission Deadline: August 18, 2015 @ 2:00 PM (Eastern Time)

Pre-Bid conference: No

Questions concerning this solicitation may be addressed to gail.walsh@purcahsing.ri.gov no later than **Monday, August 3, 2015 at 5:00 PM (ET).** Questions should be submitted in a *Microsoft Word attachment.* Please reference **RFP # 7549749 Resilient Microgrids for Critical Services** on all correspondence. Questions received, if any, will be answered and posted on the Internet as an addendum to this solicitation. It is the responsibility of all interested parties to download this information.

SURETY REQUIRED: No

BOND REQUIRED: No

GAIL WALSH
CHIEF BUYER

Vendors must register on-line at the State Purchasing Website at www.purchasing.ri.gov.

NOTE TO VENDORS:

Offers received without the entire completed three-page RIVIP Generated Bidder Certification Form attached may result in disqualification.

THIS PAGE IS NOT A BIDDER CERTIFICATION FORM

SECTION 1 - INSTRUCTIONS AND NOTIFICATIONS TO PROPOSERS

The Rhode Island Department of Administration/Division of Purchases, on behalf of the Rhode Island Office of Energy Resources is soliciting proposals for qualified vendors with significant expertise in examining the potential for microgrid implementation to submit proposals for completing a scope of work under the "Resilient Microgrids for Critical Services" Project in accordance with the terms of this Request for Proposal and the State's General Conditions of Purchase.

Funding for this activity is being provided from the U.S. Department of Housing & Urban Development's (HUD) Community Development Block Grant-Disaster Recovery (CDBG-DR) Hurricane Sandy Relief funds.

This solicitation, and subsequent award, is governed by the State's General Conditions of Purchase, which is available at www.purchasing.ri.gov

To access the State's General Conditions of Purchase, enter our website, click on Bidder Information, then click on General Information and then click on Rules and Regulations. Once the Rules and Regulations are displayed, scroll to the bottom of the page and double click on Appendix A, which contains the State's General Conditions of Purchase.

The scope of work is described herein.

This is a Request for Proposal, not an Invitation for Bid. Responses will be evaluated on the basis of the relative merits of the proposal, in addition to price; there will be no public opening and reading of responses received by the Division of Purchases pursuant to this request, other than to name those Offerors who have submitted proposals.

Potential respondents are advised to review all sections of this solicitation carefully and to follow instructions completely, as failure to make a complete submission as described elsewhere herein may result in rejection of the proposal.

Proposals which depart from or materially alter the terms, requirements, or scope of work defined by this Request will be rejected as being non-responsive.

All costs associated with developing or submitting a proposal in response to this Request, or to provide oral or written clarification of its content shall be borne by the respondent. The State assumes no responsibility for these costs.

Proposals are considered to be irrevocable for a period of not less than sixty (60) days following the opening date, and may not be withdrawn, except with the express written permission of the State Purchasing Agent.

All pricing submitted will be considered to be firm and fixed unless otherwise indicated herein.

Proposals misdirected to other State locations or which are otherwise not present in the Office of Purchases at the time of opening for any cause will be determined to be late and will not be considered. For the purposes of this requirement, the official time and date shall be that of the time clock in the reception area of the Division of Purchases.

It is intended that an award pursuant to this RFP will be made to a prime vendor who will assume responsibilities for all aspects of the work. Joint venture and cooperative proposals will not be considered. Subcontractors are permitted, provided that their use is clearly indicated in the vendor's proposal and the subcontractor(s) to be used is identified in the proposal.

All proposals should include the vendor's FEIN or Social Security Number as evidenced by a Form W-9, downloadable from the Division of Purchases' website at www.purchasing.ri.gov.

The purchase of goods or services under an award made pursuant to this RFP will be contingent on the availability of funds.

Bidders are advised that all materials submitted to the State of Rhode Island for consideration in response to this Request for Proposal will be considered to be public records, as defined in Title 38 Chapter 2 of the Rhode Island General Laws, without exception, and will be released for inspection immediately upon request, once an award has been made.

Interested parties are instructed to peruse the Division of Purchases website on a regular basis, as additional information relating to this solicitation may be released in the form of an addendum to this RFP. It is the responsibility of all potential offerors to monitor the website and be familiar with any changes issued as part of an addendum.

Equal Employment Opportunity (G.L. 1956 § 28-5.1-1, et seq.) - §28-5.1-1 Declaration of policy – (a) Equal opportunity and affirmation action toward its achievement is the policy of all units of Rhode Island state government, including all public and quasi-public agencies, commissions, boards and authorities, and in the classified, unclassified, and non-classified services of state employment. This policy applies in all areas where State dollars are spent, in employment, public services, grants and financial assistance, and in state licensing and regulation. For further information, contact the Rhode Island Equal Opportunity office at (401) 222-3090, or Raymond.lambert@doa.ri.gov.

In accordance with Title 7, Chapter 1.2 of the General Laws of Rhode Island, no foreign corporation, a corporation without a Rhode Island business address, shall have the right to transact business in the state until it shall have procured a Certificate of Authority to do so from the Rhode Island Secretary of State (401-222-3040). *This is a requirement only of the selected vendor(s).*

The respondent should be aware of the State's Minority Business Enterprise (MBE) requirements, which addresses the State's ten per cent (10%) participation by MBE's in all State procurements. For further information, contact the MBE office at (401) 574-8253 or visit the website at http://www.mbe.ri.gov or by e-mail at Dorinda.keene@doa.ri.gov.

SECTION 2 – PROJECT DESCRIPTION: RESILIENT MICROGRIDS FOR CRITICAL SERVICES

Summary

The Rhode Island Office of Energy Resources (OER) is seeking qualified vendors with significant expertise in examining the potential for microgrid implementation to submit proposals for completing a scope of work under the "Resilient Microgrids for Critical Services" Project. The purpose of the project is to assess the opportunity, costs, and benefits of deploying resilient microgrids for critical services in Rhode Island. The project will consist of two phases: 1) a high-level opportunity and needs assessment, and 2) recommendations for an initial microgrid pilot design and longer-term microgrid program and policy recommendations.

The selected vendor will work closely with a select group of state agency representatives, the electric distribution company, and other applicable stakeholders assembled by the OER (the "Project Team").

Anticipated Project Timeline:

Milestone	**Anticipated Date**
RFP Release Date	July 20, 2015
Submission of Questions on RFP Due	August 3, 2015
Proposals Due	August 18, 2015
Proposal Award Date	September 15, 2015
50% Project Completion	February 29, 2016
Complete Draft Report	April 12, 2016
Final Report	June 30, 2016

Background

Rhode Island has experienced a number of severe weather-related events over the last four years, including floods, blizzards, extended heat waves, extreme cold snaps and hurricanes. These events pose significant financial and energy security risks to the State. For example, during Blizzard NEMO in February 2013, all of the fuel terminals in the State lost electrical power for two days and were unable to provide fuel (i.e. gasoline, diesel, heating oil, jet fuel) to gas stations, homes, airports, and other critical facilities.

During Hurricane Sandy, approximately 120,000 electric customers lost power (nearly 25% of the state's 482,000 customers), and 1,200 natural gas customers lost service (out of 252,000 gas customers). In addition, nine substations went out of service; 1,433 sections of wires went down; and 63 poles were broken. Five days passed until National Grid was able to fully restore electric service to 100% of customers. Fuel terminals were also severely impacted—four out of the six terminals were forced to shut down during storm landfall, and the Inland Terminal at Tiverton did not get power back for at least three days.

Rhode Island has already taken initial steps to gather high-level information on energy emergency considerations through the development of an Energy Assurance Plan (EAP)[1], which was funded with

[1] OER will work with the selected vendor to execute a non-disclosure agreement in order to make the EAP available for review.

American Recovery and Reinvestment Act funds in 2012. The State, however, has not yet drawn on the recommendations of the EAP to design or implement a comprehensive, targeted strategy that addresses energy security vulnerabilities at the municipal or facility level, specifically at discrete critical infrastructure assets such as hospitals, police and fire stations; water and sewage treatment plants; senior centers and nursing homes; shelters; correctional facilities; fueling stations; and grocery stores.

Microgrids, combined with backup or distributed generation, are a cutting-edge and emerging technology that enables a host site to continue operating without power interruption or loss even if the surrounding electric grid loses power. States, including neighboring Connecticut and Massachusetts, are actively exploring ways to deploy microgrids to improve power resiliency at critical infrastructure assets and mitigate localized energy security risks. **The "Resilient Microgrids for Critical Services Project" will assess the opportunity, costs, and benefits for developing a program in Rhode Island, and develop recommendations for designing an initial microgrid pilot.** The results of the project, and ultimately the results of the pilot, are meant to inform Rhode Island's longer-term public policy approach to supporting investment in resilient microgrids for critical services.

Scope of Work

Phase 1: Opportunity and Needs Assessment for Resilient Microgrids

The vendor will conduct an opportunity and needs assessment for resilient microgrids for critical services in Rhode Island. This phase will involve primary research including the identification of potential host sites and an economic cost/benefit analysis of installing microgrids at select, priority locations. It will also involve secondary research and information gathering on the resiliency applications of microgrids.

The vendor will have access to existing critical infrastructure data and reports from Rhode Island's Critical Infrastructure Program (RICIP), as necessary, to assist in the assessment.[2] Sources of available data include available GIS data layers as well as state, local and tribal infrastructure assets identified in existing emergency and mitigation plans.

Final Deliverable: This phase will result in a report delivered to OER containing the results of analysis and information gathered for the following tasks[3]:

[2] RICIP establishes criteria for the prioritization of infrastructure in all 16 federally recognized sectors and identifies what that infrastructure is. The report is still underway, however many sectors and their related critical infrastructure have been identified.

[3] Note on product specifications: All products shall be provided to the Grantor's representative at least 10 working days prior to their general public release. Products such as reports and studies must be furnished in both hard copy and electronic format. Two printed and bound copies of all final report type products must be submitted. Electronic copies must include editable files of reports and studies. All GIS products must be submitted as topologically corrected ArcGIS file geodatabases with metadata meeting Federal Geographic Data Committee (FGDC) standards and shall be made available to the RIGIS database for inclusion therein. All interim and final products (reports, maps, data, etc.) supported by this agreement shall be public documents, pursuant to R.I. General Law.

Task 1: Site Identification, Characterization, and Prioritization

Purpose: Understand the number and types of potential host sites in Rhode Island and in the CDBG-DR funding eligibility areas that would benefit from resilient microgrids for critical services

- **Define "critical infrastructure" for the purposes of the project**: The vendor will work with the Project Team to establish a set of eligibility criteria to identify the universe of at-risk, high-priority infrastructure locations throughout Rhode Island. The definition should go beyond traditional emergency management uses of the term and encompass community recovery hubs, low-moderate income groups, and other vulnerable populations. The focus should be on critical infrastructure for which microgrids are a technically feasible and cost-effective approach to provide resiliency (for example, a cell phone tower might benefit from a photovoltaic solar system and a battery, but not necessarily warrant installation of a microgrid).
- **Propose parameters for classification and ranking of sites**: Possible parameters include but are not limited to: applicable critical infrastructure sector; type of energy security vulnerability or risk; grouping at the "system", "cluster", or "asset" level; geographical location (including county and proximity to riverine or coastal features); demographic profile (including low-moderate income and vulnerable populations); existing classification; or otherwise.
- **Inventory and characterize high-priority critical infrastructure locations for resilient microgrids**: Based on the definition of critical infrastructure and classification parameters identified above, the vendor will develop a complete list of possible host sites for microgrids and rank them according to the criteria developed. The vendor will further screen locations that meet the eligibility criteria for funding under the CDBG-DR program[4], identifying priority sites for a pilot.[5]

Task 2: Summary of Microgrid Resiliency Applications

Purpose: Provide background on microgrid technologies and describe the energy resiliency applications of microgrids

- **Provide a review and explanation of current microgrid technologies**: The overview will include general purpose and applications of microgrids, performance characteristics, market status, value chain, market barriers, and any available cost (capital and operational) data.
- **Provide a microgrid taxonomy:** The vendor should develop a classification scheme for general categories and types of microgrid configurations, based on (but not limited to) the following considerations: number of meters, type of generation, storage, and other applicable characteristics. The intent of the taxonomy is to establish clear terminology, map microgrid services to specific resiliency needs, and help guide the microgrid pilot and program design to

[4] Locations or sites that qualify for CDBG-DR funding under the Low/Moderate Income (LMI) National Objective are defined as follows: "Facility or cluster of facilities that primarily serve all residents of a primarily low/moderate income census area (minimum 51% of residents at/below 80% of Area Median Income, as defined by HUD), or exclusively serve a population presumed to be low/moderate income (presumed LMI populations include the elderly, battered adults, homeless persons, and severely disabled adults)."

[5] Phase 1 Task 1 reports will most likely contain restricted and sensitive information and therefore will not be made public. The vendor will ensure that data collected as part of Task 1 remains confidential.

strategically align with public policy objectives of cost-effective grid resiliency and environmental benefits.

- **Identify how different microgrid technology solutions meet critical infrastructure resiliency needs**: The vendor should examine pros and cons of different microgrid configurations from an energy management and resiliency perspective, including qualitatively evaluating the potential effectiveness of microgrids in mitigating specific energy security vulnerabilities identified at the potential host sites. The vendor should identify other potential alternative (i.e. more cost-effective) technological solutions OR non-technological solutions (methods, protocols, training, best practices, etc.), if any, to meet the same specific risk mitigation/energy resiliency needs. The vendor should also address: single-meter versus multiple meter microgrids; issues pertaining to fuel storage or access for CHP; opportunities and limitations of PV and storage as components of microgrids; various financing scenarios for PV (PPAs and leases), and potential roles for backup generators in microgrids.
- **Identify challenges with different microgrid technology solutions**: The vendor should examine pros and cons of different microgrid configurations from an engineering and facility management perspective. Some possible topics include, but are not limited to: interconnection issues, permitting, maintenance costs, fuel costs (for CHP or fuel cell systems), wiring or re-wiring costs, power quality and speed, and the variability of existing onsite loads.

Task 3: Cost/Benefit Analysis of Rhode Island Critical Infrastructure Microgrids

Purpose: Estimate costs and benefits for microgrid deployment at critical infrastructure in Rhode Island

- **Develop microgrid cost-effectiveness framework:** The vendor will identify types and levels of costs and benefits associated with typical potential microgrid deployments in Rhode Island. If applicable or valuable, the configurations identified in the previous task should guide the design of the framework.
- **Perform "case study" microgrid cost/benefit analyses**: The vendor will work with the Project Team to select two to three sites or community-based, critical asset "clusters" from the list of priority locations identified in the first task, including sites in Washington and Newport Counties. Locations eligible for CDBG-DR funding, based on low-income or vulnerable populations or otherwise, may be prioritized. At the locations identified, the vendor will apply the microgrid cost-benefit framework using the best available public cost data and quantitative analysis where possible to capture benefits. Where possible, the vendor should draw on data or estimates of lost economic revenue and other opportunity costs due to sustained power losses in Hurricane Sandy and Blizzard Nemo, which serve as recent representative examples of severe weather in Rhode Island. The purpose of the case study is to build the justification for a potential follow-up CDBG-DR application for executing a pilot (see Phase 2 below), as well as to examine from a public policy perspective the relative costs and benefits of implementing a pilot, or ultimate program.

Phase 2: Resilient Microgrids Pilot Design and Policy Recommendations

Based on the findings of Task 1, the vendor will develop a design for a demonstration pilot to procure, install, and manage resilient microgrid(s) for critical services in Rhode Island at site(s) eligible to receive CDBG-DR funding. These potentially include community recovery hubs and locations with predominantly vulnerable populations. Based on the pilot design recommendations developed by the vendor, the OER and Project Team anticipate submitting a follow-up proposal for additional CDBG-DR funding to execute the pilot. The vendor will be solely responsible for developing the design parameters of the pilot, not for solicitation, procurement, implementation, or any other responsibilities related to the pilot. It is expected that the OER would directly administer the pilot should a follow-up proposal be awarded.

This phase will also include secondary research on best practice microgrid policies and programs in other jurisdictions, and possible synergies with existing Rhode Island energy programs and structures.

Final Deliverable: This phase will result in a work product delivered to OER detailing all necessary components of the pilot, and a chapter of the report containing the results of the jurisdictional research[6]:

Task 1: Microgrid Pilot Design

Purpose: Develop information and tools necessary to solicit project proposals for microgrids pilot(s) at sites eligible to receive CDBG-DR funding

- **Identify roles in overall pilot implementation:** The vendor will outline the respective roles of the host site(s), local/state agencies, the electric distribution company, and other applicable stakeholder groups in soliciting proposals for qualified vendors to develop microgrid projects at sites eligible to receive CDBG-DR funding.
- **Design of solicitation process and components:** The vendor will recommend up to three options for soliciting and awarding proposal(s). The vendor should address considerations including (but not limited to): host site recruitment, ownership and operation, eligible technologies, technical requirements, selection criteria, regulatory considerations, implementation, etc. The Project Team will work with the vendor to identify any other necessary requirements related to CDBG-DR funding that would need to be considered. The vendor will develop an itemized budget for the pilot assuming a total funding of approximately $2 million (final budget TBD).
- **Provide recommendations for implementation:** The vendor should provide recommendations on pilot implementation, such as technical assistance for proposed projects, timelines for engineering and construction, guidance on FAQs, data collection requirements from proposed projects, etc.

Task 2: Microgrid Program and Policy Recommendations

Purpose: Develop a framework for a post-pilot strategy to support microgrids deployment in Rhode Island

[6] See Footnote #1.

- **Review microgrid policies and programs in other jurisdictions**: The vendor will provide a brief overview of how other states, utilities, and cities have deployed microgrids and provide summary information on the structure, funding, and results of those initiatives.
- **Develop recommendations for microgrid public policy support in Rhode Island**: Based on the review of other state best practices, and input from the Project Team, the vendor will propose recommendations to promote ongoing investment in microgrids in Rhode Island. Components of this strategy will include (but not be limited to): overarching guiding principles, goals, and policy objectives for microgrid deployment; relationship to and synergies with existing Rhode Island policies and programs; potential funding sources and suggested levels; legal and regulatory considerations; and major elements of program design. The vendor should also propose economic screening information, tools, or methodologies for evaluating the cost-effectiveness of future projects, drawing on the conclusions of the cost-effectiveness framework analysis from Phase 1.

SECTION 3 – PROPOSAL REQUIREMENTS

PROPOSAL SUBMISSION

Questions concerning this solicitation may be e-mailed to the Division of Purchases at gail.walsh@purchasing.ri.gov no later than the date & time indicated on page 1 of this solicitation. Please reference the RFP # on all correspondence. Questions should be submitted in a Microsoft Word attachment.

Responses to questions received, if any, will be provided, as an Addendum to this RFP, and posted on the Rhode Island Division of Purchases website at (www.purchasing.ri.gov) It is the responsibility of all interested respondents to download this additional information. *If technical assistance is required to download, call the Help desk at (401) 222-3766 or lynda.moore@doit.ri.gov.*

An original plus four (4) copies of the Technical Proposal with one (1) electronic copy and an original plus four (4) copies of the Cost Proposal in a separate sealed envelope with one (1) electronic copy, must be either mailed and received prior to the submission deadline or hand-delivered in a sealed package marked **"RFP #7549749: Resilient Microgrids for Critical Services"** to:

RI Department of Administration
Division of Purchases, 2nd Floor
One Capitol Hill
Providence, RI 02908-5855

NOTE: Proposals received after the above-referenced due date and time will not be considered. Proposals misdirected to other State locations or those not presented to the Division of Purchases by the scheduled due date and time will be determined to be late and will not be considered. Proposals faxed, or e-mailed, to the Division of Purchases will not be considered. The official time clock is in the reception area of the Division of Purchases.

RESPONSE CONTENTS

1. A completed and signed three-page R.I.V.I.P. generated bidder certification cover sheet downloaded from the Rhode Island Division of Purchases' Internet home page at www.purchasing.ri.gov.

2. A completed and signed Form W-9 downloaded from the Rhode Island Division of Purchases' Internet home page at www.purchasing.ri.gov. **Please include with original proposal only.**

3. An original plus four (4) copies of the Technical Proposal with one (1) electronic copy.

4. A **separate sealed** original plus four (4) copies of the Cost Proposal with one (1) electronic copy.

TECHNICAL PROPOSAL CONTENTS

The Technical Proposal must be submitted in the format described below, clearly labeling the sections as described. Please keep fonts to 11 point at a minimum and length of proposals to 20 pages at a maximum (1.5 line spacing) including all sections listed below:

1. **OVERVIEW** (1-2 pages)
2. **TECHNICAL PROPOSAL** (4 pages minimum; 10 pages maximum including figures)
3. **QUALIFICATIONS & EXPERIENCE** (about 3 pages)
4. **PROJECT MANAGEMENT & ORGANIZATION** (about 2 pages)
5. **COST PROPOSAL** (1 page)
6. **ATTACHMENTS** (not counted toward page limit)

OVERVIEW

The Overview will concisely lay out the offeror's understanding of the problem, describe their proposed approach to the work and explain how they are well suited to perform the tasks.

TECHNICAL PROPOSAL

Discuss your solution to the proposed scope of work. Include a description of your approach to each phase and task. Indicate your ability to complete the scope of work within the established timeframe and proposed schedule of deliverables/project milestones.

QUALIFICATIONS & EXPERIENCE

Please provide the following:

- Company Profile: Provide an overview of history, length of time in business, organizational and staff capacity, core competencies, and any other resources uniquely suited to recommending and implementing solutions to the scope of work outlined in this solicitation.
- Relevant Experience: Describe your experience with similar projects. Respondents familiar with the New England region are desirable.
- Examples of Prior Work: If possible, reference two or three examples of previous projects that best display your ability and experience with work of a similar nature and specify the role your firm played in each project.
- Reference Information: Provide names, addresses, telephone numbers and permission to contact two former or current clients for which your organization has performed work in the last three years.

PROJECT MANAGEMENT & ORGANIZATION

List all staff and/or subcontractors proposed as members of the project team and the tasks they will perform on the account. Describe their duties, responsibilities, and concentration of effort applying to each. Please include resumes, curricula vitae or statements of prior experience and qualification (these may be provided as attachments not counting towards overall page limit). An organizational chart showing roles and responsibilities on the project is desirable. The consultant team may include subcontractors; however, the prime respondent will be solely responsible for the management and work-products of the consultant team.

COST PROPOSAL

Please provide a signed Cost Proposal reflecting one, all-inclusive price for the scope of service. The maximum budget for this solicitation is $120,000. Cost proposals must provide a budget broken down by task as described in the scope of work included in this solicitation. Estimated travel costs and expenses should be indicated as a separate line item. Please also include the following, by task and for each staff and/or subcontractor proposed as members of the project team: estimated personnel hours, level of effort, hourly billing rates, other direct costs, and any other relevant information.

SECTION 4 - EVALUATION PROCESS AND AWARD

OER shall review and competitively evaluate all of the applications. The State reserves the right to select no proposals for any reason or if the responses do not meet a sufficient standard based on the evaluation criteria. The State reserves the right to waive any minor irregularities or informalities in a proposal as it determines or to allow Respondents to correct them, and to accept or reject any Proposal or portion thereof, and to enter into any agreement deemed to be in the best interest of Rhode Island. The State reserves the right to discuss with the selected applicant(s) any terms and conditions, including financial issues, for any proposed project. The State reserves the right to seek additional information from any and all Respondents including but not limited to requests for clarifications and interviews.

OER will then make a qualifications-based recommendation for final selection to the Rhode Island State Purchasing Agent, or her designee, who will make the final award decision.

Notwithstanding the above, the State reserves the right not to award this contract or to award on the basis of cost alone, to accept or reject any or all responses, and to award in its best interest.

EVALUATION & SCORING CRITERIA

Scoring Criteria	Description	Possible Points
Technical Proposal	• The quality of the Proposal demonstrates the candidate's ability to provide superior technical expertise for assessing the opportunity, costs, and benefits of deploying resilient microgrids for critical services in Rhode Island • The proposed approach meets the needs and criteria set forth in the RFP	30
Qualifications & Experience	• The candidate has completed similar projects and is qualified to undertake the scope of work outlined in the RFP • References and prior work demonstrate the candidate's ability to provide superior modeling analyses and technical support	20
Project Management & Organization	• Proposal shows clarity of team management structure, the availability of senior staff to supervise and contribute to the work, and ability to complete deliverables in a timely fashion	20
Cost Proposal	• The candidate submits a reasonable and competitive pricing structure commensurate with the value offered	30
Total		100